

Instructional Design: Symphony 101 an Online Media Based Learning Platform

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Abstract: Studies have shown that listening to classical music can raise IQ, relieve stress, improve creativity, and provide mental and physical health benefits to its listeners. An important source for classical music can be found in the Symphony Orchestra. Yet, due to the drop of sales and attendance, symphony orchestras are on the decline. According to the Horizon Report (2013), online learning has become popular for many adults across the nation. Therefore, in this research study online multimedia modules were created in an effort to connect with this demographic, allowing them to discover and appreciate live classical music. The purpose of this Instructional Design project was to develop and evaluate the impact of using an online multi-media based website on learning the history, instrumentation, form, and modern day use of the Symphony Orchestra for adults in the state of Hawai'i. Hawai'i residents between the ages of 18-65 were invited to participate in this study. This study incorporated the Analysis, Design, Development, Implementation, Evaluation (ADDIE) method as well as Gagne's Nine Events of Instruction, and also incorporated: multimedia presentations, pre/post surveys, online tools, and assessments. Attitudinal survey responses indicated that participants found this project to increase their interest and motivation in listening to live symphony orchestra concerts and music. Results of the assessment scores also indicated that participants experienced a greater understanding the symphony and how it works. The data collected from this study could help guide future educators of the arts in using web-based instruction to effectively connect with their learners, especially in the field of classical music instruction.

Introduction

In the past several years the performing arts have split in many different directions with art forms such as dance, jazz, ballet, opera, and musicals (to name a few) being offered in a variety of forms and venues across the world. In recent years, studies have shown that there has been a decline in these live performance art settings. One art form in particular, the Symphony Orchestra, has seen a rather massive decline in numbers. For example, in the United States, Classical music audiences have declined from 9.3 percent of adult attendees in 2008 to 8.8 percent in 2012. They also grew older: Adults ages 35 to 54 reduced their attendance while those 55 and up participated at the highest levels (in 2008, the 55-plus crowd accounted for 33.5 percent of audiences; in 2012 they were 36 percent). (Wise, 2013).

This decline is unfortunate as studies have shown that listening to classical music can raise IQ levels, relieve stress, improve creativity, and provide mental and physical health benefits to its listeners (Larsen, 2013). In this Instructional Design project, a website was created that included online resources, multimedia tools, instructional videos, and classical music examples for adult participants of all ages to be better educated and motivated in listening to classical music. The purpose of this Instructional Design module was to develop and evaluate the impact of using an online multi-media based website on learning the history, form, and instrumentation found in the Symphony Orchestra for adults in the state of Hawai'i.

Literature Review

Recent research on listening to live classical music has found a number of positive physiological and overall health benefits: including increase in focus & brain activity, higher IQ, as well as relaxation (Larsen, 2013). Live classical music exists in many different forms, but is most well known in the form of the symphony. According to research, “the number of live symphony performances is starting to decrease in numbers and is in danger of disappearing altogether.” (Wise, 2013).

As stated in the Horizon Report, “there has been a large increase in enrollment in and offering of online courses in higher education settings” (New Media Consortium, 2013). Using an online platform to teach music motivates learners and makes the learning process easier and engaging (Robinson, 2011). Similar research in recent years has shown that many music educators have expressed high levels of interest in using different music technologies in teaching online and in the classroom settings. Studies have shown that multimedia tools and software’s are just starting to be used in the music classroom with evidence showing higher motivation, focus, and positive results in learning and understanding of musical ideas and expressions. (Dammers, 2010)

Globalization and by extension, technology, have become driving powers in educational policy development across the United States, including the field of music and music education (Choi, H., & Piro, J. M., 2009). The Internet and mobile and digital technologies are available for people of all ages and backgrounds to be able to research, learn about, and collaborate in. While this digital information is available, and often times free of charge, in the form of YouTube, Wikipedia, apps, and blogs, there are a number of studies that have found that even though this information exists for educators to use in the classroom, there are very few resources and modules available for many topics in music education, such as a technology based music course which has been proven to be as effective as face to face learning (Dammers, 2010).

Project Design

The ADDIE Instructional Design model was used as a framework for the (A)nalysis, (D)esign, (D)evelopment, (I)mplementation, and (E)valuation of the instructional online module. The Analysis portion of this project was applied in the selection process for participants that were suited for this study and in the creation of a needs assessment. The needs assessment identified the discrepancies between the “gaps” and “wants” for this project. The “gaps” were identified as the lack of interest and attendance to Symphony concerts, and the lack of educational modules

for learning about the symphony; while the “wants” of this project were identified as creating a new and innovating way to educate and garner interest in the Symphony.

The Design phase was geared towards the formation of hierarchy charts, planning modules, and setting up the blueprint of the website. The hierarchy chart (see Appendix A) comprised several sections that centered on a goal statement. The goal statement for this project was: “Adult Residents of Hawaii will learn how to identify the different components that make up the symphony orchestra.” This goal statement was support by four goal steps that would later become the four major modules found in the project. These four goal steps were broken down into goal sub-steps which dictated the details and materials that would be learned in each module. Beneath the goal sub-steps were entry level skills, which were skills needed by the participants to complete the above steps and modules. Most of these steps revolved around web and online tool navigation.

In the Development phase, the focus was on the creation of the modules themselves. For example, a suitable hosting website was needed to post all of the modules. Wix.com was chosen for this purpose because of the ease of use and intuitive design capabilities. This allowed the researcher to create HTML5, and mobile, websites through the use of simple drag and drop tool options. This phase also included the selection of several open source online tools such as YouTube and Google Docs).

In the Implementation phase, the completed website was sent to all participants to be completed over a two week period. Participants were sent a consent form (see Appendix B) that guaranteed complete anonymity, security of their personal data, and the outline and expectations of participating in the module. All modules, assessments, and surveys were submitted and collected online by February 20th, 2015.

Finally, the Evaluation phase focused on the evaluation of the comments and responses from the attitudinal survey, as well as on the assessment results from the participants, which were collated and put into graph forms using Google Docs, Google Sheets, and Microsoft Word.

The cognitive learning theory of Gagne's Nine Events of Instruction was also utilized throughout the instructional module to assist with learning. Figure 1 shows the outline of steps in Gagne's Nine Events of Instruction for this project.

1. Gaining Attention	A multimedia introduction incorporating symphony music and a small bio.
2. Informing the Learner of the Objective	Each module outlines the objective in text and in the multimedia presentation.
3. Stimulating Recall and Prior Knowledge	Each module presentation is connected and incorporates materials and definitions from the last module viewed.

4. Presenting Information	There are 4 modules with 4 multimedia presentations.
5. Providing Guidance	There are guided materials that can be viewed after each module for supplemental learning.
6. Eliciting Performance	After each module there is a small online activity that will link with the material learned in the module.
7. Providing Feedback	Emails were sent out each week checking in with participants to see if anyone had any questions or concerns about their work.
8. Assessing Performance	After the presentation, guidance materials, and activity, there was a short assessment given using google forms.
9. Enhancing Retention & Transfer	An inspiration webpage was created in Wix that allowed users to explore different eras of classical symphony music from past to present.

Figure 1. Sample project outline of Gagne's 9 Events of Instruction

To gauge if the instructional goals were met, data was compiled from the pre- and post- test assessment and attitudinal survey given at the beginning and end of the project. There were also four mini assessment quizzes found within each module. These surveys and questionnaires given to the participants were then displayed for clarification and comparison in figures and charts using Google Forms.

Methods

Subjects

The subjects of this study were 17 Hawaii residents who were adults ages 18 years and older and who were comfortable using online tools and technologies. Participants consisted of 8 males and 9 females from a wide background of ethnicities and experience with music. Participants who had a general interest in music were selected over those who had no interest. Because the adult age demographic is typically experienced and prone to using online tools (New Media Consortium, 2013), this module was developed and delivered online.

Instrumentation

This instructional project incorporated a wide variety of mixed media and educational approaches that measured both qualitative and quantitative data. There was also attitudinal and opinion based questionnaires towards the materials, music, and presentations used in the module. Presentation of the materials in each module included the following multimedia features:

- Instructional videos: these videos incorporated classical music, graphics, pictures, and voice overs by the project designer. These instructional videos were created in iMovie and embedded into the online video sharing website YouTube.

- Downloadable PDF documents: these documents were created in Google Docs and were made up of pictures, media, and links to various resources pertaining to the modules. They were then embedded and linked to on the project website.
- Embedded mp3s & images: these media types allowed users to see and hear the symphony orchestra. They were used in both the assessments and in the instructional activities.
- Thinglink: this in-image interaction tool was used as an online task for participants to search for YouTube links that would lead them to videos pertaining to the different Symphony instrument sections.
- Google Docs & Forms: these programs were used for participant assessments, attitudinal surveys, consent forms, and in the completion of online tasks and activities.

Each of the four modules were created in an online website, Wix.com. To complete each module, participants first watched an embedded YouTube instructional video. They then completed online activities & tasks such as: filling out survey questions in Google Docs (Figure 2.), creating their own customized YouTube playlist, and downloading a review sheet. As the project was completed, participants completed a final online assessment created in Google Forms (Figure 3), which was used to gauge understanding and to collect information on participant awareness of the symphony and its music, instruments, history, and form. The formats of the surveys, assessments, and quizzes found in the modules included multiple-choice, fill in the blank, and short answer questions. Questionnaires in Google Forms were also used for pre- & post-test surveys to evaluate the impact of the module using a 5-point Likert scale. There were 10 questions in each of the pre- and post- assessments that rated each participant's understanding of the Classical Symphony before and after completing the module.

Online Tool No. 2: Symphony Instruments (Option1) ☆

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Online Tool No. 2: Symphony Instruments (Option1)

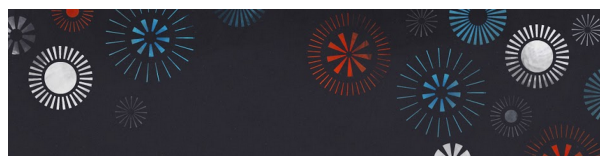
Instructions:

Option 1: Do a basic search in Youtube for one of the instruments that you liked most from the Symphony Instruments. Find a Youtube clip that features your preferred symphony instrument, listen, and add your preferred selection to this Google Doc Form and then add it to your "Symphony Playlist" in Youtube. (hint: Concertos are great pieces for symphony instruments, ex: Cello Concerto)

(Hint: use the share button on your Youtube video to get a smaller link)

	Instrument Section & Name	Youtube Link
Ex.	String Section - Cello	http://youtu.be/815CKYwVab4
1.	String Section - Violin	http://youtu.be/GAkW_Wi4ylo
2.	Brass Section - Tuba	http://youtu.be/fYOsNp4O7AU
3.	Woodwind Section - Bassoon	http://youtu.be/2gXh83hNnWw
4.	String - Cello (with Piano)	http://youtu.be/Ww_9pDFciJI
5.	Cello	https://www.youtube.com/watch?v=483gWXbupGc
6.	Glockenspiel	http://youtu.be/1XgdKTIy1Pw
7.	Woodwind Section - Clarinet	http://youtu.be/o_gm0NCabPs

Figure 2. Google Doc Task



3: Instruments - Short Assessment Quiz

Thank you for taking the time to fill out this Short Assessment Quiz. Please fill this out as best as to your abilities.

THIS DOCUMENT AND THE INFORMATION IN IT ARE PROVIDED IN CONFIDENCE AND MAY NOT BE DISCLOSED TO ANY THIRD PARTY OR USED FOR ANY OTHER PURPOSE

*** Required**

Please identify the instrument below. *
Please click here: <http://youtu.be/EHk8YL0JIE>

☐ Tubular Bells
☐ Timpani
☐ Glockenspiel
☐ Snare Drum

What are the names of the Instrument Sections found in a Symphony Orchestra? *

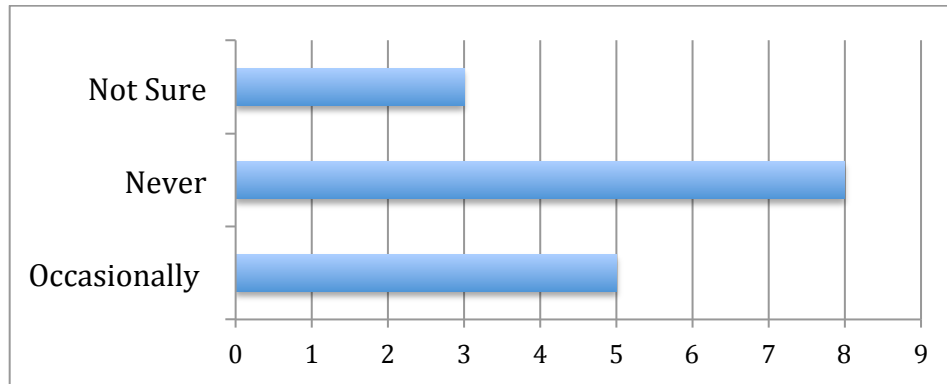
☐ Violin, Viola, Cello, Bass
☐ Violin, Flute, Trumpet, Drum

Figure 3. Google Form Assessment

Results

Results of this project varied from mixed to very favorable. In the pre-survey, participants were asked if they had ever listened to a live symphony performance. 53% of the participants said that they had listened to a live symphony performance while 47% said that they had never listened to a live performance. This participant pool was nearly split evenly in half in their experience in attending live concerts. This showed that though some participants had attended live concerts not all of them had and that attendance was not in the higher percentile. Participants were also asked how often they listen to symphony music? Table 1 below includes the 5-point Likert scale responses from all participants in terms of their current symphony listening practice, with the majority of participants never listening to classical music. These results are in line with what research has shown with concert attendance and interest leaning towards the lower percentages and stresses the importance of the symphony needing support and resources to help the public understand and appreciate the Symphony.

Table 1. Survey Question: How often do you listen to classical music?



Note: values represent number of participants.

To complete the final post-survey, participants had to have completed the entire project and modules and submitted all of the necessary materials for each module. They were then given a final exit survey to gauge their attitudes towards the project modules as well as their attitudes towards Symphony music. Table 2 includes participants' responses to questions relating to attitude and learning in regards to: how the materials in the modules impacted their understanding and completion of the final assessment, use of online media in making learning about the symphony engaging, increased interest in the symphony, and overall confidence of each participant's understanding of the Symphony. Participants responded to a 5-point Likert survey, ranging from 1 – Strongly Disagree to 5 – Strongly Agree, and in all instances the results favored the positive.

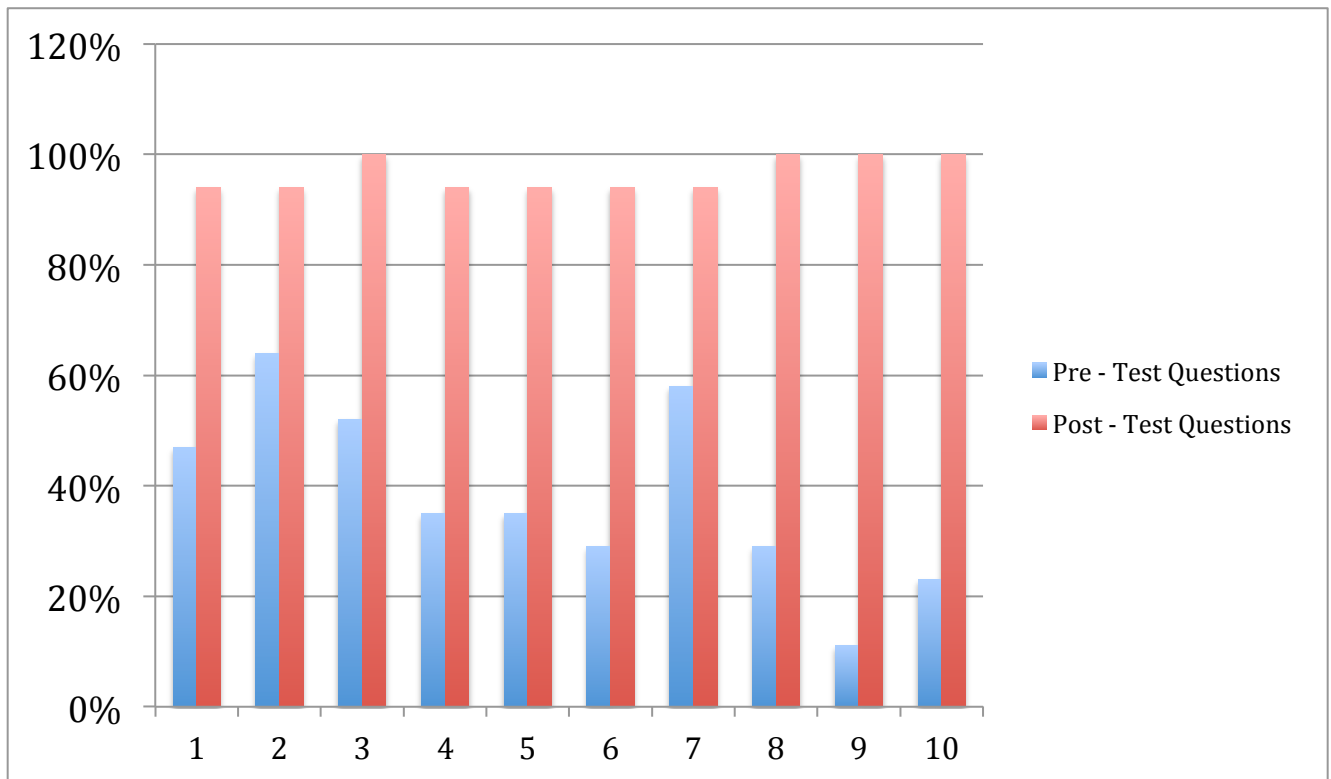
Table 2. Post Survey Attitudinal Results

No.	Survey Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	Did the materials in the module prepare you for the Post-test?	0%	0%	0%	24%	76%
2.	Did the use of online media make learning about the Symphony engaging?	0%	0%	0%	12%	88%
3.	Did participating in this online learning module increase my interest in listening to the Symphony?	0%	5%	5%	12%	78%
4.	After completing the project do you feel confident in your understanding of the Symphony?	0%	0%	0%	0%	100%

Assessment scores were then tallied to compare each participant's experience with their learning outcomes when comparing the pre- & post- assessment results, there was a large discrepancy between the two. The pre-test results indicated a very low score average with the highest scores being in the low 60 percentile and the lowest scores being in the 10 percentile. These numbers represented very low assessment scores before completing the module with the pre-assessment score averaging 38.3%.

Chart 1 compares the pre- & post-assessment data and indicates improved post-assessment scores. The highest scores in the post-assessment were in the 100 percentile, with 4 out of the 5 participants getting 100% correct answers. The lowest scores in the Post-Assessment were in the low 90 percentile giving the average scores in the Post-Assessment to be 96.4%. These numbers demonstrate a remarkable 58.1% increase in overall scores between the Pre- & Post Assessments.

Chart 1. Comparison of Pre- and Post- Test Results



Discussion and Conclusion

The participant pool for this study was small (17 participants), yet there was a lot important feedback and data that were collected to help draw a conclusion on the effectiveness of this

project. Pre- and post- assessment results showed an increased understanding of the symphony. There were also very positive survey results—participants showed an increased interest in listening to classical music and also attending symphony concerts. Lastly, comments received by participants via email praised the “simplicity, creativity, and professionalism” that was present throughout the module and made the learning experience a success. It is possible to use the online venue to present instruction on the arts and music. The attitudinal and assessment results give credence to this. The inclusion of multi-media options that incorporated sound, movies, interactive activities, and a sound learning theory, helped to clarify and increase their engagement, learning, and general enjoyment of the Symphony.

This project could have been improved by incorporating even more interactive online videos. With online tools such as EdPuzzle becoming available, participants could be more engaged in the video, as tools of this nature allow instructors to embed questions directly into the video as the participants are viewing it. Programs like EdPuzzle would allow participants to answer questions and engage in the materials rather than passively being lectured to by a video, which could allow for easier distractibility and loss of engagement.

Feedback on the modules indicated that the design of the online modules themselves were professional, easy to access, and navigate. Using this feedback, the following recommendations can be made on the design of online modules: headers should provide information clearly and links should be easy to find so that participants don’t miss vital information. The use of a sidebar for easier navigation was mentioned to help improve the module intuitiveness as well as having more pages to help separate each individual task. These suggestions would help future instructors with creating online modules that were more user friendly.

Limitations for this study took several forms. The researcher was located in a different time zone, which made responding and communication difficult for the participants and caused an error to occur in one of the assessment questions, which impacted the results. Another limitation was the lack of data. With only 17 participants, the researcher was unable to fully gauge student learning, and with so few participants, margins for error were higher. Lastly, this project was done completely anonymously; therefore, the researcher was unable to track individual results and learning, and created a greater possibility for margin of error.

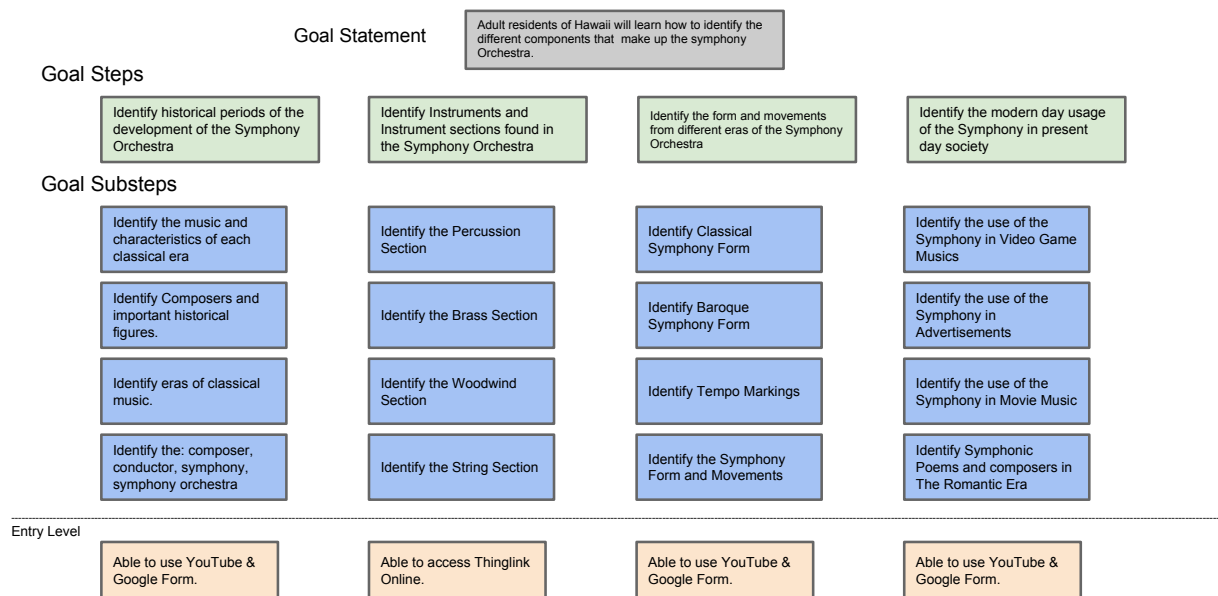
Overall, this module was successful in increasing the participants’ knowledge, awareness, and interest in some of the different facets that make up the standard symphony orchestra. If participants are made aware of how the symphony orchestra works, they will become aware of a great musical resource that can be used as a gateway for numerous cognitive and physical health benefits. This project could also be modified as a free resource for K-12 and Higher Education teachings and also as a resource for Symphony outreach programs. Lastly, this project could help act as a basis for future educators of the arts in using web-based instruction to effectively connect with their learners, especially in the field of classical music instruction.

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APPENDIX A Hierarchy Chart

Hierarchy Chart



Appendix B

Consent Form

James Gochenouer Instructional Design Project Participation Consent Form

Aloha,

You have been invited to participate in an Instructional Design Project by James Gochenouer, a graduate student in the University of Hawaii at Manoa's LTEC (Learning and Design Technology) Department. The purpose of this Instructional Design module is to develop and evaluate the impact of using an online multi-media based website on learning the history, form, current use, and instrumentation found in the Symphony Orchestra for adults in the state of Hawaii.

If you elect to participate in this research project you will be tasked with completing the following:

- Pre-survey Demographic Questionnaire made up of several multiple choice questions about general background and musical experience. (5-10 Minutes)
- Post-survey Attitudinal Questionnaire made up of likert scale questions in regard to the efficiency of the modules and attitudes towards music. (5-10 Minutes)
- Pre-test Evaluation Form to assess current knowledge of the Symphony Orchestra. (No more than 15 minutes)
- Post-test Evaluation Form to assess student learner outcomes after completing all modules. (No more than 15 minutes)
- Watch four different multimedia instructional presentations centered on learning about the symphony. (No more than 15 minutes each)
- Review and engage in four different instructional activities based on the content learned in the module. (5-10 Minutes)
- Download different iPad applications from the Apple iTunes store. These applications will assist with learning and provide expansion on the modules. (5-10 Minutes)

Participation in this project is completely voluntary and participants will not be reimbursed for completing the project. There will be no risk in participating in this project and will be beneficial towards learning about the symphony as well as furthering the development of online learning.

The Surveys of this research will protect participants identity by not using any real names and any and all information will be confidential so as not to expose the identity of the

participant. Also, any tests employed will be done anonymously such that participants will not be individually judged based on their responses. This study will not use any personal information that could be used to identify the participants in any way shape or form. Participants can withdraw or refuse to answer any part of the project without any negative response or consequences.

If you have any questions about this research study please email James Gochenouer at jamesag@hawaii.edu. You can also contact the faculty advisor for this project, Dr. Grace Lin at gracelin@hawaii.edu, or at (808) 956-3912. If you have any questions regarding your rights as a research participant, please contact the UH Committee on Human Studies at uhirb@hawaii.edu or at (808) 956-5007.

Participant:

Please click the “Continue” link below if you agree to the above terms and conditions and agree to participate in this research project.